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**SUBJECTIVE POVERTY IN EUROPE: THE ROLE OF HOUSEHOLD
SOCIOECONOMIC CHARACTERISTICS AND SOCIAL CAPITAL**

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Subjective poverty in Europe: the role of household socioeconomic characteristics and social capital*

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Abstract. *This paper aims to show to what extent self-perceived poverty in Europe is associated with specific household socioeconomic characteristics and particular aspects of household/ community social capital endowment in order to disclose the primary risk factors of family poverty status. Such evidence would help central and local governments to define those economic and social goals which should receive more attention by policies aiming at poverty eradication. In particular, the paper focuses on the associations between a proxy of subjective poverty (Ability to make ends meet) and two sets of variables describing, respectively, the household socioeconomic characteristics and the household/community social capital endowment. In order to pursue this aim, a multiple correspondence analysis (MCA) is carried out. The empirical analysis is based on the 2008 EU-SILC survey and the Eurostat statistic database. The results show a relevant association between self-perceived poverty and both household socioeconomic characteristics and social capital. Implications for public policies are also discussed.*

Key words: *subjective poverty, household, socioeconomic characteristics, social capital, public policies, EU-SILC.*

Classification JEL: I32, D10, I38

1 - Introduction

Measuring poverty and understanding why it occurs represent, nowadays, a core task for both researchers and policy-makers in advancing towards the eradication of poverty. Poverty is a concept lacking a universally acceptable definition and often faced with competing interpretations: poverty is difficult

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to define, but it is even harder to measure. Since many years, both researchers and policy-makers have shown an increasing interest towards the subjective (Goedhart et al., 1977; Van Praag et al., 1980) and multidimensional (Massoumi, 1986; Case and Deaton, 2002; Deutsch and Silber, 2005; Van Praag and Ferrer-i-Carbonell, 2005) aspects of poverty arguing that poverty is not an objective status based exclusively on the level of income necessary to satisfy household needs but depends on people's perceptions and feelings, on the resources that are essential for full participation/inclusion in society and on environmental aspects of people's lives (Tomlinson, Walker and Williams, 2007; Van Praag and Ferrer-i-Carbonell, 2005). Social capital plays a crucial role here. According to the most widely accepted definition suggested by the World Bank Social Capital Initiative Program research group, *social capital includes the institutions, the relationships, the attitudes and values that govern interactions among people and contribute to economic and social development* (Grootaert and van Bastelaer, 2002). This definition synthesizes the different points of view expressed by Putnam (1993), Coleman (1990), Olson (1982) and North (1990) and implies that living in a society characterized by model and cooperative behavior and where trust replaces suspicion and fear can have a systematic positive effect on individuals' perception of poverty as their socioeconomic vulnerability is reduced as well as the resources they need only for the fact that they must deal with risk and avert major losses (Helliwell, 2001).

Several empirical studies have shown how and to what extent in Europe self-perceived poverty is associated with household size and type, with available household resources (Van Praag and Van der Sar, 1988; Ravallion and Lokshin, 2002; Castilla, 2010), with individual and household socioeconomic characteristics (i.e. gender, age, employment status, education, tenure status, the area of residence) (Ravallion and Lokshin, 2002; Stanovnik and Verbic, 2004; Istat, 2008; Isae, 2009). Limited attention has been, instead, devoted to the analysis of the relationships with household and community social capital endowment despite its growing importance as a major determinant of economic well-being⁴ at micro and macro level that has increased its implications in social policy as a tool to achieve better outcomes of traditional public policies aimed at poverty reduction⁵.

⁴ In this paper the term *economic well-being* is used as a synonymous for *economic conditions*.

⁵ The mechanism through which social capital is said to reduce poverty can be summarized as follows : i) at the micro level social ties and interpersonal trust facilitate the flow of technical information and knowledge that help to reduce economic transactions costs (Barr, 2000) and ameliorate conventional resource constraint such as labour (Coleman et al., 1966; Granovetter, 1995; Fernandez et al., 2000) and credit market access or credit limitations, thus reducing the vulnerability of households to poverty (Knack, 1999); ii) at the macro level social engagement and civic responsibility can also strengthen democratic governance (Almond and Verba, 1963), a mix of norms and sanctions can control defection and dishonesty (Bebbington and Perreault, 1999) and improve the efficiency and honesty of public administration (Putnam, 1993; Fukuyama, 1995) as well as the quality of economic policies (Easterly and Levine, 1997). Moreover, social capital can be viewed as a form of asset embedded in social structures and relationships with a productive capacity that can be extended beyond generating economic returns to providing (but not always) useful benefits for attaining many other



Taking into account these observations, this paper aims to show, through a cross-country comparative analysis, to what extent self-perceived poverty in European countries is associated with specific household socioeconomic characteristics and particular aspects of household/community social capital endowment in order to disclose the primary risk factors of family poverty status. Such evidence would help central and local governments to define those economic and social goals which should receive more attention by policies aiming at poverty reduction.

In order to pursue this aim, a multiple correspondence analysis (MCA) is carried out. The empirical analysis is based on the 2008 EU-SILC survey and the Eurostat statistic database.

The paper is organized as follows. Section 2 describes the data and the methodology used, section 3 presents the results and section 4 provides the conclusions and future research prospects.

2 - Data and methodology

A multiple correspondence analysis (MCA)⁶, based on 2008 EU-SILC survey⁷ and the Eurostat statistic database, is carried out in order to depict the main associations between the household subjective poverty proxy (set as supplementary variable)

Ability to make ends meet (1 with great difficulty, 2 with difficulty, 3 with some difficulty, 4 fairly easily, 5 easily, 6 very easily).

and two sets of active variables describing, respectively,

different goals (Knack and Keefer, 1997) [i.e. human capital accumulation (Galor and Zeira 1993 ; Coleman, 1988), social efficient outcomes such as social cohesion (Reimer, 2002; Green et al., 2003) and social capability (Abramovitz, 1986; Abramovitz and David, 1996), and so on].

⁶ The Multiple Correspondence Analysis (MCA) is a multivariate statistical technique that allows the synthesis of a large data set, specifically the data matrix $X_{n,Q}$, where n represents the number of statistical units and Q the number of categorical variables

(each with J_Q items so that $\sum_{q=1}^Q J_q = J$), by identifying $H \leq J$ uncorrelated latent variables

(factors) linear combinations of the original J items. Among all possible linear combinations that can be formed, the factors are those with maximum variance. Then, the MCA, as a method of data reduction, tries to limit the loss of information about the degree of variability in the data that are expression of individual peculiarities (Lebart, Morineau and Piron, 1995).

⁷ EU-SILC is the Eurostat project on Income and Living Conditions which involves all 27 European countries. The 2008 EU-SILC survey does not include the data for Malta which can be found from the 2009 wave onwards, however, not yet available at the time the paper was written.



1. the respondent/household socioeconomic characteristics⁸ (see Appendix - Tab.1A) : Age, Gender, Marital Status, Educational qualification, Employment status, Low work intensity status, Branch of activity, At risk of poverty and social exclusion, General Health, House/flat size, Tenure status, Dwelling Type, Household type, Equivalized disposable income, Poverty and deprivation indicator, Financial burden of housing cost, Debts Family/Children/Social Exclusion, Housing, Cash and alimonies received.
and
2. the household/community social capital endowment (see Appendix Tab.2A)⁹. The proxy variables selected are indicators of the level of
 - *Social Behaviour (SB)*, population socioeconomic characteristics that facilitate/hinder the development of social and economic cooperative behaviour ;
 - *Social Relationships (SR)*, measures of the potential and actual degree of social relationships;
 - of some specific territorial and environmental characteristics which are significant determinants of social capital formation.

3 - Results

The variability explained by the first four factorial axis is equal to 85,4% (with the corrections formula due to Benzecri,1979)¹⁰. The interpretation of

⁸ The set of active variables includes the respondent's socioeconomic characteristics in order to take into account the features of the person, who provided, on behalf of the whole family, the answers to all the survey questions and in particular to the household subjective poverty proxy *Ability to make ends meet*.

⁹ Despite some shortcomings mainly due to the impossibility of measuring all components of social capital and of carrying on comparative longitudinal studies, the EU-SILC cross-sectional survey and the Eurostat statistic database represent an important reference source for comparative studies aiming at measuring the effect of social capital on household economic well-being especially because they provide comparable and high quality cross-sectional indicators for all the 27 european countries (Santini and De Pascale, 2012a.b). The above-mentioned indicators, when available, are measured both at household and at societal level in order to take into account simultaneously the families status and that of the community they belong to.

¹⁰ The MCA has been performed on the indicator matrix where the rows are the $n = 211,482$ households and the $J = 154$ columns are the items of the $Q=45$ active variables, and which has as many ones in each row as there are variables indicating the categories of response. This coding schema creates artificial additional dimensions because one categorical variable is coded with several columns. As a consequence, the inertia (i.e., variance) of the solution space is artificially inflated and therefore the percentage of inertia explained by the first dimensions is severely underestimated. Infact , it can be shown that all the factors with an eigenvalue less or equal to $1/Q$ simply code these additional dimensions (Q is the number of active variables). The Benzecri correction formula takes into account that the eigenvalues smaller than $1/Q$ are coding for the extra dimensions and that MCA is equivalent to the analysis of the Burt matrix whose eigenvalues are equal to the squared eigenvalues of the analysis of the indicator matrix X . Specifically, if we denote by λ_i the eigenvalues obtained from the analysis of the indicator matrix, the corrected eigenvalues, denoted by $c\lambda_i$, are obtained as:



the results will be limited only to the first, second and fourth factorial axis as they seem to give answer to the questions this paper aims to investigate¹¹. The detailed description of each factorial axis is provided by Table 1, 2 and 3 and a synthetic view of the results is presented in Figures 1, 2 and 3.

Subjective poverty is the respondent's assessment of own household economic well-being and aims to capture the inherent subjectivity and multidimensionality of poverty. The results of the MCA show that as far as European households are concerned subjective poverty is associated at least with three aspects:

- a. the household economic conditions ;*
- b. the degree of family and social distress ;*
- c. the level of community social capital endowment.*

In particular :

a. the **household economic conditions** go through different variables such as household disposable income, deprivation and work intensity status, size and type, some respondent socioeconomic characteristics (i.e. age, marital, education, employment and health status), and those household/community social capital endowment indicators strongly associated with household economic well-being as it is clearly shown by the first factorial axis (cfr. Table 1 and Fig.1). As a matter of fact poor self-perception of poverty prevails in small-size and severely deprived households with low equivalized disposable income and work intensity status and whose respondent is, in most cases, aged 60 years or more , widowed, with a low level of education , unemployed or retired/inactive , at risk of poverty and reporting poor health ; moreover , poor perception of poverty is associated with modest housing conditions¹² as well as scarce availability of devices which helps to keep alive both real and virtual relationships¹³ and low quality of environment where the European families live¹⁴ . The results are consistent with those obtained in previous studies: in fact, one of the most robust results found in all the empirical literature is that

$$c\lambda_i = \begin{cases} \left[\left(\frac{q}{q-1} \right) \left(\lambda_i - \frac{1}{q} \right) \right] & \text{if } \lambda_i > \frac{1}{q} \\ 0 & \text{if } \lambda_i \leq \frac{1}{q} \end{cases}$$

¹¹ The main aim of the paper is to focus on the contrasts between high and low levels of self-perceived poverty while the third factorial axis relates to the contrasts between extreme evaluation of self-perception of poverty (with great difficulty and very easily) and average ones.

¹² Specifically, small housing size (*Roo- House/flat : number of rooms*).

¹³ *PC – Do you have a computer ?*.

¹⁴ *Occ-Overcrowding rate ,H1c Housing deprivation rate: % of total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames of floor,AP3- Urban population exposure to air pollution by particulate matter.*



there is a strong association between household poverty status and income (Easterlin, 2001) and that, as extensively proved by a recent research (Eurostat, 2010), poverty and poor housing and environmental conditions are two concepts that can be used in conjunction to analyze different aspects of households' and individuals' economic well-being. The two concepts are directly related to the definition of poverty that the EU Council of Ministers agreed back in 1985 and according to which the poor are 'the persons whose resources (material, cultural and social) are so limited as to exclude them from the minimum acceptable way of life in the Member State to which they belong' (EU Council, 1985). This definition is relative and includes both outcome elements ('the exclusion of minimum acceptable way of life...') and input elements ('... due to a lack of resources').

Implied in the above results is the possible reverse causality between household economic well-being and social capital endowment. Social capital influences household well-being because it generates and facilitates income-related knowledge and information flow; conversely, income levels are also expected to determine many forms of social capital endowment being investigated. These alternative reactions or reverse causality must be accounted for when defining the empirical model which analyzes the determinants of household economic well-being.

The association observed on the first factorial axis between self-perceived poverty and low levels of crime rates confirms the results of a recent research which analyzes the relationships between crime and poverty status in the 27 European countries (Fraser, 2011). Actually, the results show that, contrary to the expectations and trends observed in the past, poverty and conditions associated with poor socioeconomic communities are *not* linked to higher crime rates and they may even suggest the opposite. The poorer of these nations, and those with higher degrees of inequality of wealth, and those who are less well developed in terms of important services, have *less* crime than the wealthier nations. Furthermore, higher crime rates in wealthier countries seem to depend also

- on the major interest of transnational organized crime towards these countries (UNODOC, 2010);
- on the greater propensity of the population living in developed countries to denounce criminal events to the authorities of jurisdiction.

b. the ***degree of family and social distress*** goes through numerous variables such as household disposable income, type, size and working intensity status, housing conditions, entitlement to family allowances, some respondent's socioeconomic characteristics (i.e. age and employment status) and those components of household social capital endowment, such as the relationships to cope with child care, which represent an important resource available to poor people who are often described as *deficient* along other vectors (Grootaert and van Bastelaer, 2001; Woolcock,



2002). This aspect is well summarized by the second factorial axis (cfr. Table 2 and Fig.1): actually, poor self-perception of poverty prevails in low income (1st and 2nd quintile), large size and overcrowded households with dependent children and a full working intensity status, entitled to family allowances suffering from a low quality of environment¹⁵ and relying on support relationships to cope with child care, thus compensating their socioeconomic vulnerability¹⁶. The respondent is generally between 35 and 50 years old and full employed.

c. **the level of community social capital endowment** goes through social behaviour and those territorial and environmental characteristics which are significant determinants of social capital formation. This aspect is well summarized by the fourth factorial axis (cfr. Table 3 and Fig.2 and 3): actually, self-perception of poverty tends to improve in medium size households with very low income (1st quintile) and living in areas characterized by those environmental conditions which can exert a strong positive effect on the quality of family and community relationships such as low crime¹⁷, good environment of the dwelling¹⁸, low greenhouse gas emission and urban population exposure to air pollution by particulate matter¹⁹.

Thus, the results discussed help to identify suitable poverty reduction strategies. As a matter of fact, policies aiming at poverty reduction in countries characterized, on average, by poor economic conditions (placed on the left side of Fig.2) should move into two different directions. In particular, in countries such as Lithuania, Bulgaria, Romania, Estonia, Poland, Latvia, Hungary and Slovakia where low levels of economic well-being and high social capital endowment prevail, traditional welfare programs based on income support mechanism are recommended. In countries such as Italy, Portugal, Greece, Cyprus, Slovenia Czech Republic characterized by poor household economic well-being but also by low social capital endowment, policies aimed at poverty reduction can be effective if they reconcile traditional income support programs with measures which facilitate and support the development of desirable forms of social capital, in particular those which strengthen mutual trust relationships and foster

¹⁵ H1c -Housing deprivation rate: % of total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames of floor, AP3- Urban population exposure to air pollution by particulate matter.

¹⁶ CHI - Number of hours of child care by grandparents, others household members (outside parents), other relatives, friends or neighbors (free of charge) [per household member if less than 12 years old].

¹⁷ Crc- Crime recorded by the police: total crime (Number of crimes per 100 inhabitants)

¹⁸ H3c - Environment of the dwelling : % of total population suffering noise from neighbors or from the street

¹⁹ AP1 - Greenhouse gas emission (in CO₂ equivalent); AP3 Urban population exposure to air pollution by particulate matter (micrograms per cubic meter).



model behavior (i.e. reducing criminality and improving housing and environmental conditions).

Actually, living in a society characterized by economic and social cooperative behavior and where trust replaces suspicion and fear can have a systematic positive effect on households' economic well-being as their socio-economic vulnerability is reduced as well as the resources they need only for the fact that they must deal with risk and avert major losses.



4 – Conclusions

This paper aims to show, through a cross-country comparative analysis, to what extent self-perceived poverty in European countries is associated with household socioeconomic characteristics and household/community social capital endowment in order to disclose the primary risk factors of family poverty status. The results of the MCA show that subjective poverty is associated at least to three aspects:

- a. the household economic conditions ;*
- b. the degree of family and social distress ;*
- c. the level of community social capital endowment.*

Thus, the MCA besides proving once again one of the most robust results found in all the empirical literature (that is the strong link between household poverty status and income) highlights the significant association between social capital and self-perception of poverty. Therefore, in many countries policies aimed at poverty reduction should enhance household economic well-being not only through traditional income support measures but also facilitating or supporting the development of desirable forms of social capital which strengthen mutual trust relationships and foster model behavior (i.e. reducing criminality and improving housing and environmental conditions).

If the EU-SILC survey and Eurostat statistic database would provide more social capital indicators with a greater territorial breakdown, associations between social capital and household poverty could be entirely described, thus helping considerably policy-makers to promote the suitable poverty reduction strategies.

Further research should be addressed to identify which among the individual/household socioeconomic characteristics and household/community social capital endowment exert more influence on European household poverty in order to disclose the primary risk factors of household well-being. As a matter of fact in EU countries almost 84 million people live at risk of poverty, facing, depending on the country, a variety of problems from not having enough money to spend on food and clothes to suffering poor housing conditions and even homelessness; from having to cope with limited lifestyle choices that may lead to social exclusion to living in areas where social capital is deteriorating. The European Union has joined forces with its Member States supporting numerous initiatives among which we remember the *2010 European Year For Combating Poverty and Social Exclusion* : its objective was to raise public awareness about these issues and renew the political commitment of the EU and its Member States to combat poverty and social exclusion.



Tab. 1 - Description of the factorial axis :
ascending order of the coordinates of most significant items on the first factorial axis.

RISK of POVERTY	risk poverty & deprived
DEPRIVATION	Severely deprived
	COUNTRY Bulgaria
	COUNTRY Romania
MARITAL STATUS	Widowed
AGE	80+
HEALTH	Bad or very bad
EQUIVALIZED DISPOSABLE INCOME	1 st quintile
	AME Great difficulty
ROOMS	1 room
POVERTY INDICATOR	At risk
LWI	Yes
EDUCATION	Low
WORK INTENSITY STATUS	0
EMPLOYMENT STATUS	retired
PC	NO
	COUNTRY Hungary
Greenhouse gas emission (in CO ₂ equivalent)	Low
AGE	65-79
Exposure to air pollution by particulate matter	High
	COUNTRY Poland
	COUNTRY Lithuania
RISK POVERTY	poverty risk
Overcrowding rate	High
House deprivation	High
ROOMS	2 rooms
HOUSEHOLD TYPE	2adults >65
	AME Difficulty
HOUSEHOLD TYPE	1 person
	COUNTRY Italy
Crime rate	Low
EMPLOYMENT STATUS	unemployed
HEALTH	fair
	COUNTRY Slovakia
	COUNTRY Greece
EMPLOYMENT STATUS	inactive
WORK INTENSITY STATUS	0 - 0.5
	COUNTRY Slovenia
EQUIVALIZED DISPOSABLE INCOME	2 nd quintile
	COUNTRY Portugal
AGE	60-64
Overcrowding rate	Medium
	COUNTRY Estonia
BRANCH	Agriculture
ROOMS	3 rooms
Greenhouse gas emission	High
	AME Some difficulty
	COUNTRY Czech Republic
MARITAL STATUS	Separated & divorced
EDUCATION	medium
AGE	55-59
EQUIVALIZED DISPOSABLE INCOME	3 rd quintile

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Crime rate	Medium
	COUNTRY Cyprus
SEVERELY MAT DEPRIVED HOUSEHOLD	NO
	COUNTRY Spain
Exposure to air pollution by particulate matter	Medium
ROOMS	4 rooms
MARITAL STATUS	Married
POVERTY INDICATOR	Not at risk
AGE	<24
	COUNTRY Austria
HOUSEHOLD TYPE	Single and dc
AGE	50-54
WORK INTENSITY STATUS	0.5 - 1
MARITAL STATUS	Never married
HEALTH	good
RISK POVERTY	NO
Housing deprivation rate	Medium
HOUSEHOLD TYPE	2 adults <65
BRANCH	Hotels
	COUNTRY Ireland
	AME Fairly easily
Greenhouse gas emission	Medium
Exposure to air pollution by particulate matter	Low
AGE	45-49
Housing deprivation rate	Low
	COUNTRY Germany
ROOMS	5 rooms
AGE	25-29
BRANCH	Industry
BRANCH	Trade
PC	YES
EQUIVALIZED DISPOSABLE INCOME	4th quintile
LWI	NO
HOUSEHOLD TYPE	2adults & 1dc
	COUNTRY France
EDUCATION	high
AGE	40-44
AGE	30-34
BRANCH	Construction
Overcrowding rate	Low
AGE	35-39
BRANCH	Transports
WORK INTENSITY STATUS	1
	COUNTRY Belgium
BRANCH	Education
ROOMS	6+ rooms
	COUNTRY Luxembourg
	AME Easily
HEALTH	very good
BRANCH	PA
	COUNTRY Great Britain
HOUSEHOLD TYPE	2adults & 3dc
HOUSEHOLD TYPE	2adults & 2dc
BRANCH	Real estate
Crime rate	High
BRANCH	Health
EQUIVALIZED DISPOSABLE INCOME	5th quintile
BRANCH	Financial i
	COUNTRY Netherlands
	AME Very easily
	COUNTRY Sweden
	COUNTRY Finland
	COUNTRY Denmark



Tab. 2- Description of the factorial axis :
ascending order of the coordinates of most significant items on the
second factorial axis.

Child care		High
Overcrowded household	COUNTRY	Bulgaria
		Yes
Child care	COUNTRY	Latvia
		Medium
	COUNTRY	Romania
	COUNTRY	Slovenia
	COUNTRY	Poland
	COUNTRY	Hungary
Overcrowding rate		High
HOUSEHOLD TYPE	COUNTRY	Single & dc
BRANCH		Agriculture
Child care		None
FAMILY-CHILDREN ALLOWANCES		Yes
	COUNTRY	Lithuania
HOUSEHOLD TYPE		2adults & 3dc
HOUSEHOLD TYPE		2adults & 2dc
AGE		35-39
	COUNTRY	Estonia
Child care		Low
Housing deprivation rate		High
HOUSEHOLD TYPE		2adults & 1dc
AGE		40-44
EQUIVALIZED DISPOSABLE INCOME		1 st quintile
Exposure to air pollution by particulate matter		High
BRANCH		Industry
AGE		30-34
BRANCH		Trade
BRANCH		Hotels
AGE		45-49
BRANCH		Education
LWI		NO
BRANCH		Transports
EMPLOYMENT STATUS		working
Crime rate		Low
AME		Great difficulty
WORK INTENSITY STATUS		0.5 - 1
BRANCH		PA
BRANCH		Construction
EMPLOYMENT STATUS		unemployed
	COUNTRY	Italy
WORK INTENSITY STATUS		0 - 0.5
AGE		25-29
WORK INTENSITY STATUS		1
AGE		50-54
AME		Difficulty
BRANCH		Financial i
EQUIVALIZED DISPOSABLE INCOME		2 nd quintile
AGE		<24
BRANCH		Real estate
BRANCH		Health
AME		Some difficulty
Overcrowding rate	COUNTRY	Cyprus
		Medium
	COUNTRY	Greece
<i>BARYCENTER</i>		

AGE		55-59
LWI		Yes
Crime rate		Medium
EMPLOYMENT STATUS		inactive
	COUNTRY	Austria
Exposure to air pollution by particulate matter		Medium
	COUNTRY	Czech Republic
HOUSEHOLD TYPE		2 adults <65
AME		Fairly easily
EQUIVALIZED DISPOSABLE INCOME		3 rd quintile
Overcrowded household		NO
Exposure to air pollution by particulate matter		Low
FAMILY-CHILDREN ALLOWANCES		NO
	COUNTRY	Luxembourg
EQUIVALIZED DISPOSABLE INCOME		4 th quintile
	COUNTRY	Portugal
Housing deprivation rate		Medium
	COUNTRY	Spain
EQUIVALIZED DISPOSABLE INCOME		5 th quintile
Housing deprivation rate		Low
WORK INTENSITY STATUS		0
AME		Easily
HOUSEHOLD TYPE		1 person
	COUNTRY	Germany
AGE		60-64
Overcrowding rate		Low
	COUNTRY	Sweden
Crime rate		High
	COUNTRY	Great Britain
	COUNTRY	France
	COUNTRY	Denmark
AME		Very easily
	COUNTRY	Ireland
	COUNTRY	Belgium
	COUNTRY	Finland
EMPLOYMENT STATUS		retired
	COUNTRY	Netherlands
AGE		65-79
HOUSEHOLD TYPE		2 adults >65
AGE		80+



Tab. 3 - Description of the factorial axis :
ascending order of the coordinates of most significant items on the fourth factorial axis.

Greenhouse gas emission	COUNTRY Lithuania
	COUNTRY Estonia
	COUNTRY Bulgaria
	COUNTRY Romania
	Low
	COUNTRY Poland
	COUNTRY Hungary
	COUNTRY Latvia
	COUNTRY Slovakia
Exposure to air pollution by particulate matter	Low
Crime rate	COUNTRY Sweden
	Low
EQUIVALIZED DISPOSABLE INCOME	1 st quintile
HOUSEHOLD TYPE	2 adults >65
	COUNTRY Finland
DWELLYNG TYPE	Detached
Environment of the dwelling	Good
AGE	65-79
EMPLOYMENT STATUS	retired
AME Very easily	
	COUNTRY Ireland
	COUNTRY Denmark
HOUSING COST	Not a burden
TENURE STATUS	Owner
MARITAL STATUS	Married
AGE	60-64
MARITAL STATUS	Widowed
ALIMONIES	NO
RISK POVERTY	NO
EQUIVALIZED DISPOSABLE INCOME	5th quintile
HOUSING COST	somewhat a burden
HOUSEHOLD TYPE	2adults <65
AME Fairly easily	
AGE	80+
POVERTY INDICATOR	Not at risk
	COUNTRY Great Britain
	COUNTRY Czech Republic
AME Easily	
AGE	50-54
AME Some difficulty	
EMPLOYMENT STATUS	working
EQUIVALIZED DISPOSABLE INCOME	2nd quintile
Environment of the dwelling	Medium
AGE	55-59
BARYCENTER	

Greenhouse gas emission	Medium
DWELLYNG TYPE	Building > 10
LWI	NO
AGE	45-49
HOUSEHOLD TYPE	2adults & 1dc
	COUNTRY Slovenia
HOUSEHOLD TYPE	2adults & 2dc
AME Difficulty	
Exposure to air pollution by particulate matter	Medium
HOUSEHOLD TYPE	2adults & 3dc
HOUSEHOLD TYPE	1 persom
AGE	40-44
EQUIVALIZED DISPOSABLE INCOME	4th quintile
	COUNTRY Cyprus
DWELLYNG TYPE	Semi-detached
AGE	35-39
	COUNTRY France
AGE	30-34
	COUNTRY Belgium
RISK POVERTY	YES
	COUNTRY Greece
TENURE STATUS	Reduced_free
HOUSING COST	heavy burden
AGE	25-29
MARITAL STATUS	Separated & divorced
Crime rate	Medium
MARITAL STATUS	Never married
Environment of the dwelling	Bad
EQUIVALIZED DISPOSABLE INCOME	3 rd quintile
Greenhouse gas emission	High
AME Great difficulty	
	COUNTRY Netherlands
POVERTY INDICATOR	At risk
	COUNTRY Luxembourg
EMPLOYMENT STATUS	inactive
	COUNTRY Austria
	COUNTRY Germany
AGE	<24
DWELLYNG TYPE	Building < 10
	COUNTRY Portugal
	COUNTRY Spain
TENURE STATUS	Tenant
	COUNTRY Italy
EMPLOYMENT STATUS	unemployed
RISK POVERTY	risk poverty & dep
HOUSEHOLD TYPE	Single & dc
LWI	YES
ALIMONIES	YES





Fig.1 Multiple Correspondence Analysis : projections of supplementary variables on F1 and F2

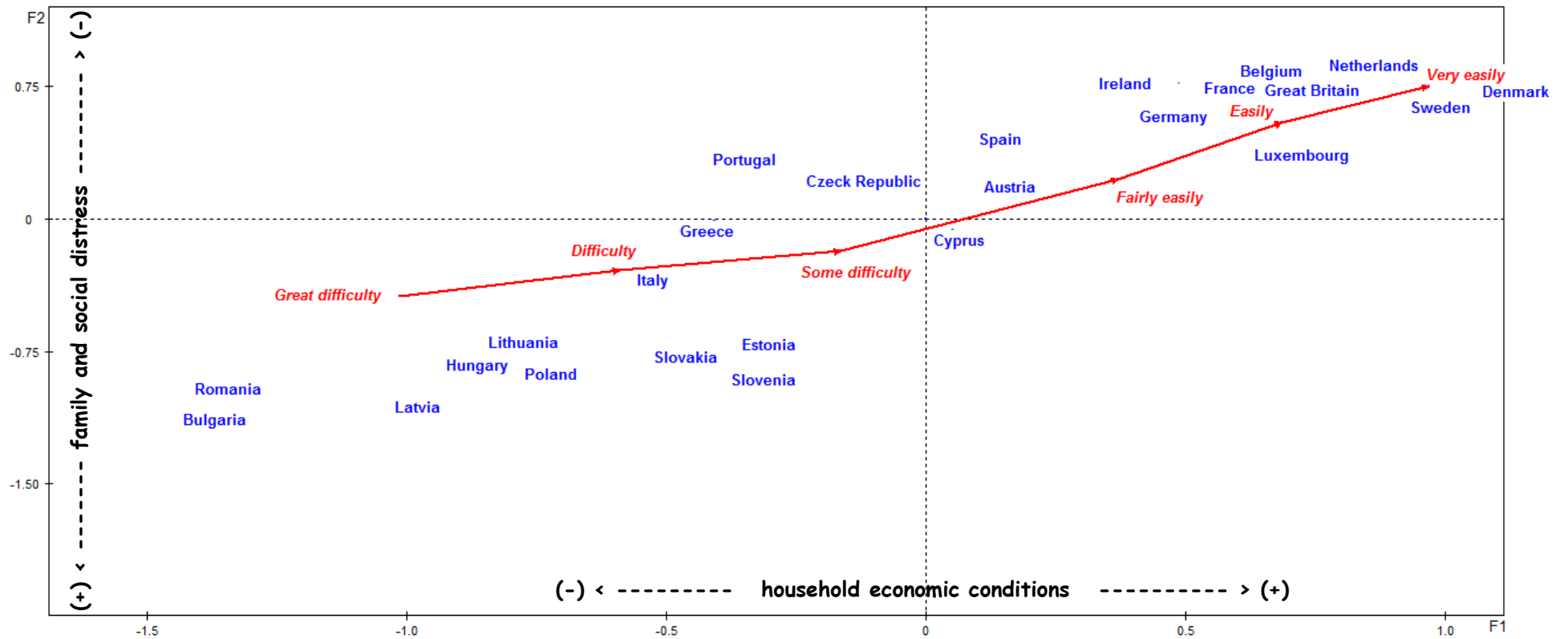




Fig. 2 Multiple Correspondence Analysis : projections of supplementary variables on F1 and F4

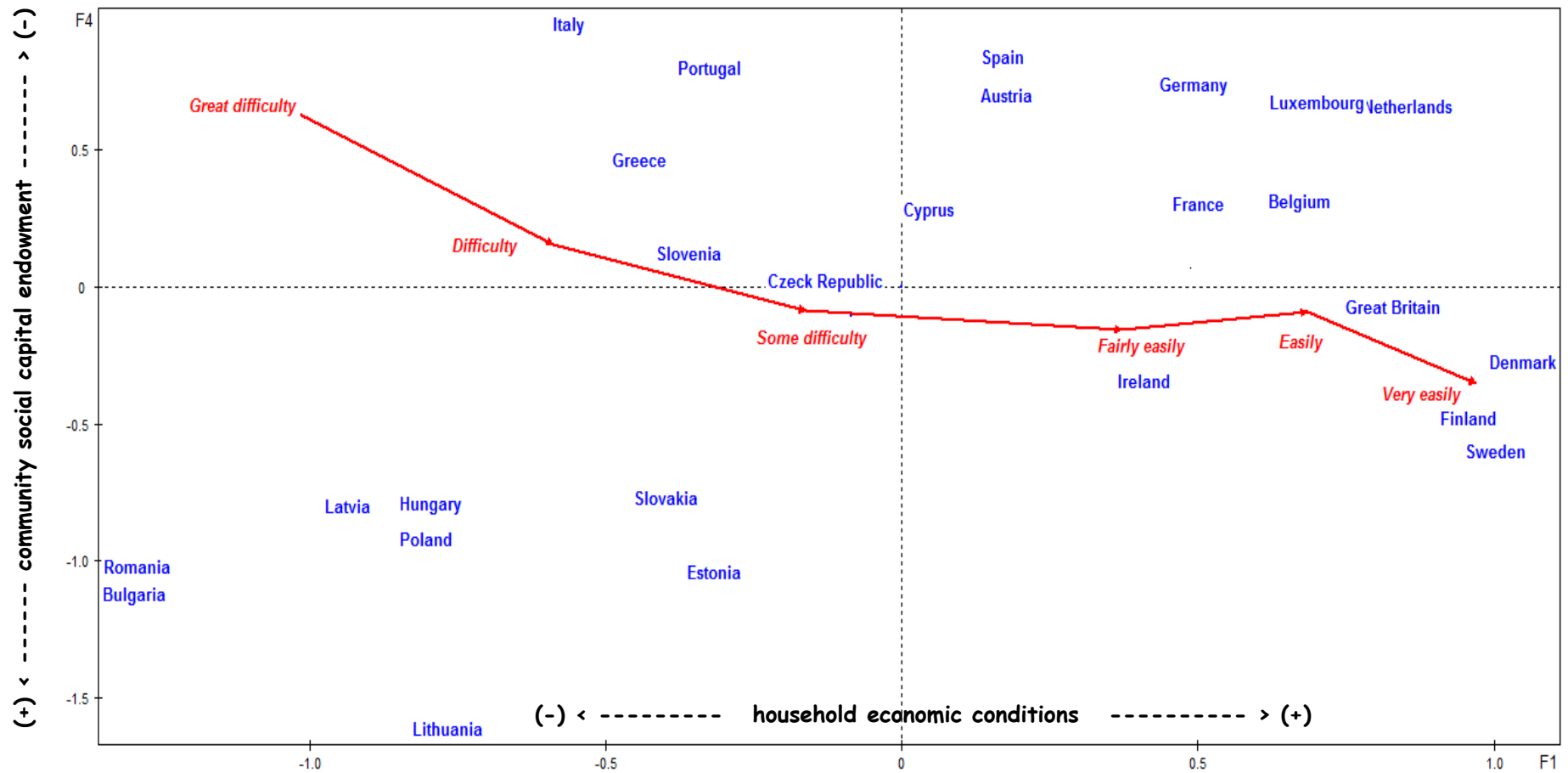
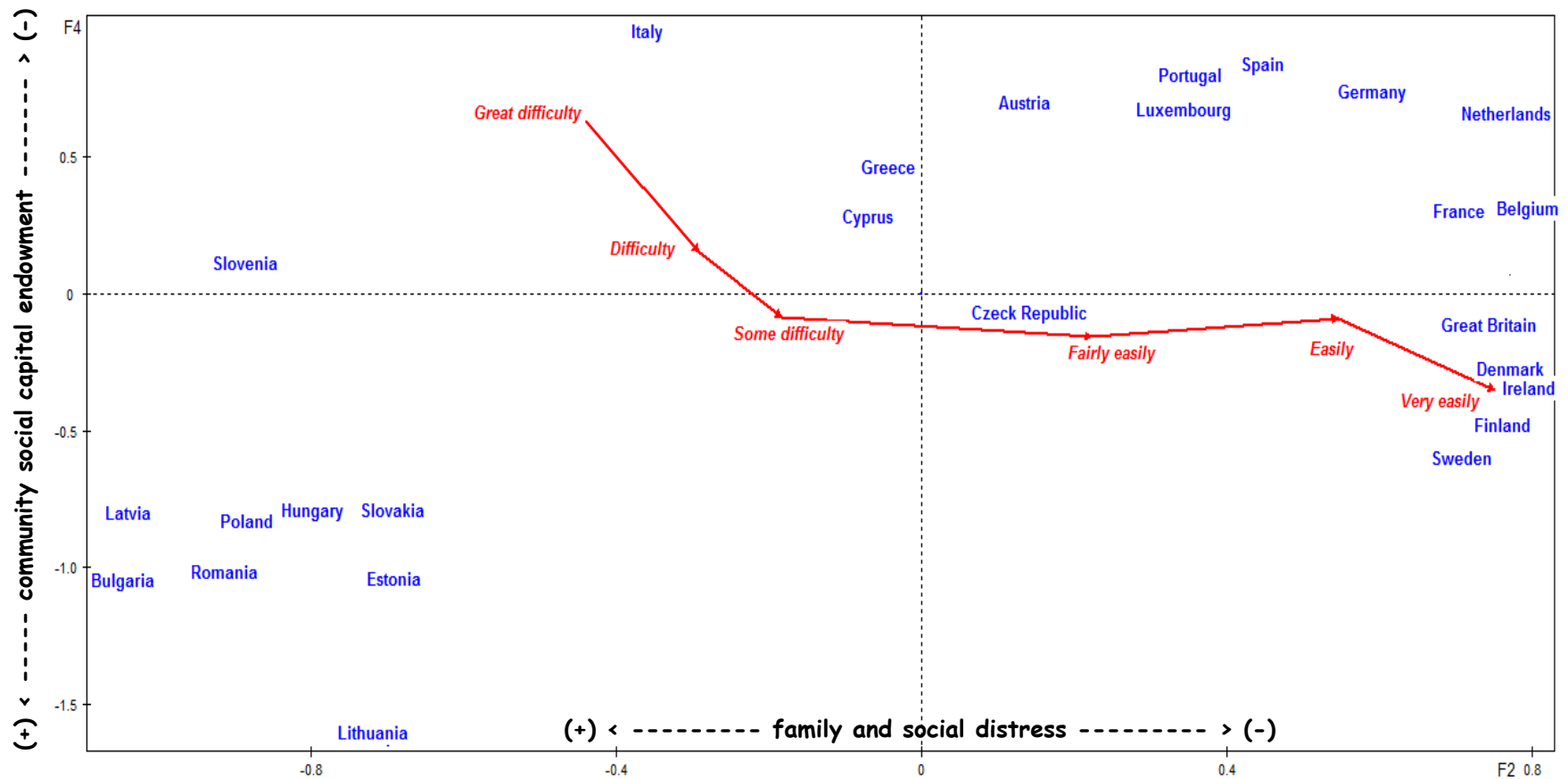






Fig. 3 Multiple Correspondence Analysis : projections of supplementary variables on F2 and F4





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APPENDIX

Table 1A Respondent and household socioeconomic characteristics (Source : 2008 EU-SILC survey)

Num	Label	Name	Items
1	Age	Age	< 24 25-29 30-34 35-39 40-44 45-49 50-54 55-59 60-64 65-79 80+
2	Gen	Gender	1 Male 2 Female
3	MST	Marital Status	1 Never married 2 Married 3 Separated or divorced 4 Widowed
4	Edu	Educational qualification	1 Low 2 Medium 3 High
5	EMP	Employment status	1 Working 2 Unemployed 3 Retired 4 inactive
6	LWI	Low work intensity status ⁽ⁱ⁾	0 no LWI 1 LWI
7	Bra	Branch of activity	1 Agriculture 2 Industry 3 Construction 4 Trade 5 Hotels and restaurants 6 Transport, storage and communication 7 Financial intermediation 8 Real estate, renting and business activities 9 Public administration, defence, social security 10 Education 11 Health and social work 12 Other 13 Not working
8	Risk	At risk of poverty or social exclusion	1 Not at risk 2 At risk of poverty 3 At risk of poverty , sev materially deprived , LWI
9	Hth	General Health	1 Very good 2 Good 3 Fair 4 Bad 5 Very bad



Continue Table 1A Respondent and household socioeconomic characteristics (Source : 2008 EU-SILC survey)

Num	Label	Name	Items
10	Roo	House/flat : number of rooms	1 room 2 rooms 3 rooms 4 rooms 5 rooms 6+ rooms
11	Tst	Tenure status	1 Owner 2 Tenant or subtenant paying rent at prevailing / market rate 3 Accommodation is rented at a reduced rate or provided free
12	Dty	Dwelling type	1 detached house 2 semi-detached or terraced house 3 apartment/ flat in a building with < 10 dwellings 4 apartment or flat in a building with ≥10 dwellings
13	Type	Household type ⁽ⁱⁱⁱ⁾	1 Type 1 - One person household 2 Type 2 - 2 adults both adults < 65 years 3 Type 3 - 2 adults , at least one adult ≥65 years 4 Type 4 - Other without dependent children 5 Type 5 - Single parent and ≥ 1 dependent children 6 Type 6 - 2 adults, one dependent child 7 Type 7 - 2 adults, two dependent children 8 Type 8 - 2 adults and ≥ 3 dependent children 9 Type 9 - Other households with dependent children 10 Type 10 - Other type
14	HDI	Equivalized disposable income ⁽ⁱⁱⁱ⁾	1 1st quintile 2 2nd quintile 3 3rd quintile 4 4th quintile 5 5th quintile
15	Poi	Poverty indicator ^(iv)	0 Not at risk of poverty 1 At risk of poverty
16	SMD	Severely materially deprived household ^(v)	0 Not severely deprived 1 Severely deprived
17	Hco	Financial burden of the total housing cost	1 A heavy burden 2 Somewhat a burden 3 Not burden at all
18	Deb	Debts for hire purchases or loans	0 Non Debts 1 Debts
19	WIS	Work intensity status ^(vi)	1 WI = 0 2 0 < WI < 0.5 3 0.5 ≤ WI < 1 4 WI = 1
20	Fal	Family/Children related allowances ^(vii)	0 No 1 Yes
21	Aal	Social exclusion not elsewhere classified – Allowances ^(viii)	0 No 1 Yes
22	Hal	Housing allowances ^(ix)	0 No 1 Yes
23	Ict	Regular inter-household cash received ^(x)	0 No 1 Yes
24	Ali	Alimonies received (compulsory, voluntary) ^(xi)	0 No 1 Yes
25	I16	Income received by people aged under 16	0 No 1 Yes



Continue Table 1A Footnotes

- (i) A low work intensity is detected when the ratio between the number of months the working age household members has been working during the income reference year and the total number of months that could theoretically have been worked by the same household member, is below a threshold set at 0.20.
- (ii) A dependent child is defined as: 1) Household members aged 17 or less or 2) Household members aged between 18 and 24; economically inactive and living with at least one parent.
- (iii) $(\text{Total disposable household income} * \text{Within-household non-response inflation factor}) / \text{Equivalised household size}$. The equivalised household size is defined as: $1 + 0.5 * (HM_{14+} - 1) + 0.3 * HM_{13-}$, where HM_{14+} is the number of household members aged 14 and over and HM_{13-} is the number of household members aged 13 or less. The *within-household non-response inflation factor* is the coefficient by which it is necessary to multiply the total disposable income to compensate the non-response in individual questionnaires. It is necessary to correct the effect of non-responding individuals within a household otherwise, income of individuals not interviewed is not added up into the total household income.
- (iv) The poverty threshold equals to 60% of equivalized national median income.
- (v) Households are severely materially deprived if they cannot afford at least four of the following nine 1) to pay their rent, mortgage or utility bills; 2) to keep their home adequately warm; 3) to face unexpected expenses; 4) to eat meat or proteins regularly; 5) to go on holiday; 6) television set; 7) a washing machine; 8) a car; 9) a telephone.
- (vi) The work intensity of the household refers to the ratio between the number of months that all working age household members have been working during the income reference year and the total number of months that could theoretically have been worked by the same household members.
- (vii) The Family/children allowance refers to benefits that: 1) provide financial support to households for bringing up children; 2) provide financial assistance to people who support relatives other than children. It includes: – Income maintenance benefit in the event of childbirth: flat-rate or earnings-related payments intended to compensate the parent for loss of earnings due to absence from work in connection with childbirth for the period before and/or after confinement or in connection with adoption; – Birth grant: benefits normally paid as a lump sum or by instalments in case of childbirth or adoption; – Parental leave benefit: benefit paid to either mother or father in case of interruption of work or reduction of working time in order to bring up a child, normally of a young age; – Family or child allowance: periodical payments to a member of a household with dependent children to help with the costs of raising children; – Alimonies or supports paid by government (central or local) if the spouse for some reason does not pay the alimony/child support. – Other cash benefits: benefits paid independently of family allowances to support households and help them meet specific costs, such as costs arising from the specific needs of lone parent families or families with handicapped children. These benefits may be paid periodically or as a lump-sum. It excludes: – Payments made by employers to an employee in lieu of wages and salaries through a social insurance scheme when unable to work through maternity leave where such payment can not be separately and clearly identified as social benefits.
- (viii) Social benefits in the function 'social exclusion not elsewhere classified' refer to the "socially excluded" or to "those at risk of social exclusion". General as this is, target groups may be identified (among others) as destitute people, migrants, refugees, drug addicts, alcoholics, victims of criminal violence. It includes: – Income support: periodic payments to people with insufficient resources. Conditions for entitlement may be related not only to the personal resources but also to nationality, residence, age, availability for work and family status. The benefits may have a limited or an unlimited duration; they may be paid to the individual or to the family, and provided by central or local government; – Other cash benefits: support for destitute and vulnerable persons to help alleviate poverty or assist in difficult situations. These benefits may be paid by private nonprofit organisations. It excludes: – Pensions for persons who participated in National Resistance. These pensions should be classified under 'old age function'. Any one who is old enough to have been in the resistance must be over 70.
- (ix) The Housing allowance refers to interventions by public authorities to help households meet the cost of housing. An essential criterion for defining the scope of a Housing allowance is the existence of a qualifying means-test for the benefit. It includes: – Rent benefit: a current means-tested transfer granted by a public authority to tenants, temporarily or on a long-term basis, to help with rent costs. – Benefit to owner-occupiers: a means-tested transfer by a public authority to owner occupiers to alleviate their current housing costs: in practice often help with paying mortgages and/or interest. It excludes: – Social housing policy organised through the fiscal system (that is, tax benefits). – All capital transfers (in particular investment grants).
- (x) Regular inter-household cash transfers received refer to regular monetary amounts received, during the income reference period, from other households or persons. They should refer to regular payment received, even if once a year, available to finance (regular) consumption expenditure. Inter-household transfers should be: – Regular, i.e. transfer receipts must be to some extent be anticipated or relied on; – Current, i.e. available for consumption during the income reference period. Regular can correspond to two different time scales: 1) it could be an annual amount received every year (longitudinal dimension) or over several years; 2) it could be periodic receipts (e.g. monthly) over a short period embedded in the income reference period (e.g. a semester). The definition of regular does not refer to precise timing and do not require strong periodicity. It includes: – Compulsory alimony and child support; – Voluntary alimony and child support received on a regular basis; – Regular cash support from persons other than household members; – Regular cash support from households in other countries. It excludes: – Free or subsidised housing provided by another household; – Inheritances and other capital transfers, i.e. transfers received from other households which the household does not consider as being wholly available for consumption within the income reference period; – Gifts and other large, one-time and unexpected cash flows, like "lump sums" to buy a car, a house, ... or to be saved for long term consumption (more than one year ahead); – Alimonies or supports paid by government (central or local) if the spouse for some reason does not pay the alimony/child support. The amount paid by the government should be recorded in the family allowances.
- (xi) As inter-household transfers, alimonies should be regular and current. Alimonies includes: – compulsory alimony and child support; – Voluntary alimony and child support received on a regular basis. Alimonies concern receipts for children and former spouse/husband which can be national or come from abroad. Alimonies excludes: – Regular cash support (other than alimonies) from persons other than household members; – Regular cash support (other than alimonies) from households in other countries; – Free or subsidised housing provided by another household; – Inheritances and other capital transfers, i.e. transfers received from other households which the household does not consider as being wholly available for consumption within the income reference period; – Gifts and other large, one-time and unexpected cash flows, like "lump sums" to buy a car, a house, or to be saved for long term consumption (more than one year ahead); – Alimonies or supports paid by government (central or local) if the spouse for some reason does not pay the alimony/child support. The amount paid by the government should be recorded in the family allowances.



Table 2A Social capital indicators²⁰

N°	Label	Name	Items	Type of indicator	Source
<i>Social behavior (SB)</i>					
1	<i>CRh</i>	In your local area are there any problems of crime, violence or vandalism? ⁽ⁱ⁾	0 No 1 Yes	Household (respondent)	EU-SILC
2	<i>CRc</i>	Crime recorded by the police: total crime ⁽ⁱⁱ⁾ [Number of crimes per 100 inhabitants].	1 Low 2 Medium 3 High	Community : country	Eurostat statistic database
<i>Social relationships (SR)</i>					
3	<i>PHO</i>	Do you have a phone? (including mobile)	0 No 1 Yes	Household (respondent)	EU-SILC
4	<i>TVC</i>	Do you have a colour tv?	0 No 1 Yes	Household (respondent)	EU-SILC
5	<i>PC</i>	Do you have a computer? ⁽ⁱⁱⁱ⁾	0 No 1 Yes	Household (respondent)	EU-SILC
6	<i>CHI</i>	Number of hours of child care by grandparents, others household members (outside parents), other relatives, friends or neighbors (free of charge) [per household member if less than 12 years old].	1 None 2 Low 3 Medium 4 High	Household	EU-SILC
7	<i>FAW</i>	Are there “family workers” in your family business? [Number] ^(iv) .	None 1 FAW 2 FAW 3 FAW 4 + FAW	Household	EU-SILC
8	<i>BOR</i>	Household can borrow from family or friends ^(v)	0 No 1 Yes	Household (respondent)	EU-SILC

²⁰ The variable *Can household borrow from family or friends ?* has not be taken into account because of the high rate of non-response. The rate of non-response is on average equal to 4,31 % but it is greater than 25% in Great Britain (27,1%) , Finland (39,4%) and Slovakia (43,2%).



Continue Table 2 Social capital indicators²¹

N°	Label	Name	Items	Type of indicator	Source
<i>Territorial context (TC)</i>					
9	DUR	Degree of urbanization ^(vi) .	1Densely populated area; 2 Intermediate area; 3Thinly populated area	Household (respondent)	EU-SILC
	Och	Overcrowded household.	0 No 1 Yes	Household (respondent)	EU-SILC
10	Occ	Overcrowding rate ^(vii) .	1Low 2Medium 3High	Community: country	Eurostat statistic database
	H1h	Do you have any of the following problems related to the place where you live? (Leaking roof, Dump walls/floors/foundation, rot in windows frames or floor)	0 No 1 Yes	Household (respondent)	EU-SILC
11	H1c	Housing deprivation rate: % of total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames of floor.	1Low 2Medium 3High	Community : country	Eurostat statistic database
	H2h	Is your dwelling too dark, meaning is there not enough day-light coming through the windows?	0 No 1 Yes	Household (respondent)	EU-SILC
12	H2c	Housing deprivation rate: % of total population considering their dwelling as too dark .	1Low 2Medium 3High	Community : country	Eurostat statistic database
	H3h	Do you have too much noise in your dwelling from neighbours or from outside (traffic, business, factory)?	0 No 1 Yes	Household (respondent)	EU-SILC
13	H3c	Environment of the dwelling : % of total population suffering noise from neighbors or from the street.	1Low 2Medium 3High	Community : country	Eurostat statistic database
	H4h	Pollution, grime or other environmental problems in the local area such as smoke, dust, unpleasant smells or polluted water	0 No 1 Yes	Household (respondent)	EU-SILC
14	H4c	Environment of the dwelling : % of total population suffering from pollution, grime or other environmental problems.	1Low 2Medium 3High	Community : country	Eurostat statistic database
15	AP1	Greenhouse gas emission (in CO ₂ equivalent).	1Low 2Medium 3High	Community : country	Eurostat statistic database
16	AP2	Urban population exposure to air pollution by ozone (micrograms per cubic meter day).	1Low 2Medium 3High	Community : country	Eurostat statistic database
17	AP3	Urban population exposure to air pollution by particulate matter (micrograms per cubic meter).	1Low 2Medium 3High	Community : country	Eurostat statistic database

(i) Crime is defined as a deviant behavior that violates prevailing norms and cultural standards prescribing how individuals ought to behave normally. (ii)The indicator includes homicides, violent crime, robbery, domestic burglary, motor vehicle theft and drug trafficking.(iii)The indicator includes portable and desktop computers . Machines dedicated to video games but without any broader functionality and computers provided only for work purposes are excluded. (iv) A *family worker* is anyone who helps a family member in agriculture or other activity, provided they are not considered employees. Persons working in a family business or in a family farm without being paid should be living in the same household as the owner of the business or farm, or in a slightly broader interpretation, in a house located on the same plot of land and with common household interests. Such people frequently receive remuneration in the form of fringe benefits and payments in kind. This category includes:- a son or daughter working in the parents' business or on the parents' farm without being paid;- a wife who assists her husband in his business, e.g. a haulage contractor, without receiving any formal pay. (v) 2008 EU-SILC module on *Over indebtedness and financial exclusion*. (vi) The degree of urbanization is classified into three categories: - *densely populated area* : this is a contiguous set of local areas, each of which has a density superior to 500 inhabitants per square kilometer, where the total population for the set is at least 50,000 inhabitants; - *intermediate area* : this is a contiguous set of local areas , not belonging to a densely-populated area, each of which has a density superior to 100 inhabitants per square kilometer, and either with a total population for the set of at least 50,000 inhabitants or adjacent to a densely-populated area; - *thinly-populated area* : this is a contiguous set of local areas belonging neither to a densely-populated nor to an intermediate area. (vii).The overcrowding rate describes the proportion of people living in an overcrowded dwelling as defined by the number of rooms available to the household, the household's size, as well as its members' ages and family situation. A person is considered as living in an overcrowded dwelling if the household does not have at its disposal a minimum number of rooms equal to one room for the household, one room per couple in the household, one room for each single person aged 18 or more, one room per pair of single people of the same gender between 12 -17 years of age, one room for each single person between 12 - 17 years of age not included in the previous category and one room per pair of children <12 years of age.

²¹ The indicator *Degree of urbanization* has not be taken into account as it is not available for the Netherlands and Slovenia . Moreover as far as Estonia, Latvia and Lithuania are concerned the items 1 - densely populated area and 2 intermediate area have been merged.

